



# Australian Bureau of Statistics

## 1367.5 - Western Australian Statistical Indicators, Jun 2007

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## Summary

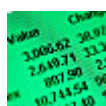
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##### STATE ACCOUNTS

Western Australia's state final demand (trend chain volume measures) grew 2.3% (\$643 million) to \$28,077 million in the March quarter 2007, following increases of 1.5% and 2.1% in the September and December quarters of 2006 respectively.



##### PRICES

Growth in Perth's consumer price index continued to slow over the last three quarters, from a peak of 1.8% in the June quarter 2006 to 0.2% in the March quarter 2007. Growth in Western Australia's wage price index of total hourly rates of pay (excluding bonuses) remained steady at 1.1% in the March quarter 2007.



##### CONSUMPTION

Western Australia recorded a total of \$6,220 million in retail turnover (trend) in the three months to April 2007, an increase of 3.2% (\$191 million) on the previous three month period. Sales of new motor vehicles (trend) rose consecutively over the last 16 months in Western Australia, from 8,701 vehicles in January 2006 to 9,970 vehicles in May 2007.



##### INVESTMENT AND FINANCE

In seasonally adjusted chain volume terms, business investment in Western Australia rose 8.9% (\$389 million) in the March quarter 2007. The number of dwellings financed for owner occupation (trend) in Western Australia recovered from 7 consecutive months of decline between May 2006 (9,602 commitments) and December 2006 (8,423 commitments), to rise in each of the last 4 months to 8,703 commitments in April 2007.



##### CONSTRUCTION

In the three months to April 2007, the total number of house approvals (trend) fell 4.6% (226 approvals) in Western Australia, compared to the previous three month period, while the total number of non-house approvals fell 19.3% (245 approvals).



## TRADE

Western Australia's trade surplus grew 34.2% (\$2,196 million) to \$8,615 million through the year to March quarter 2007. However, it was 13.5% (\$1,349 million) lower than the surplus in the preceding period of \$9,964 million - the highest surplus on record.



## MINING

Expenditure on mineral exploration (trend) in Western Australia rose 9.2% (\$18 million) to \$217 million in the March quarter 2007, the 5th successive quarterly rise since the December quarter 2005 (\$145 million).



## TOURISM

Between the March quarters of 2006 and 2007, the largest increases in overseas holidaymakers to Western Australia were from the United Kingdom and Ireland (up 1,077 persons or 5.0%), Singapore (up 989 persons or 15.1%) and South Africa (up 575 persons or 65.3%), while 12,138 (22.9%) more Western Australian residents departed overseas on holiday.



## LABOUR MARKET

Western Australia's full-time employment (trend) rose 0.3% (up 2,600 persons) to 776,100 persons in the three months to May 2007, following growth of 0.7% (5,400 persons) in the previous three month period. The unemployment rate (trend) in Western Australia fell marginally, from 3.0% in February 2007 to 2.9% in May 2007.



## POPULATION

The preliminary estimated resident population for Western Australia was 2,080,966 in the December quarter 2006, an increase of 11,089 persons (0.54%) from the previous quarter.



## SOCIAL TRENDS - POPULATION AND HEALTH

In percentage terms, Western Australia's population growth of 17% between June 1996 and June 2006 was higher than the national average of 13% and was the 2nd highest among the states and territories behind Queensland with 23%. In 2005, there were 11,300 deaths registered in Western Australia. The underlying causes of death were mainly cancer (malignant neoplasms), ischaemic heart disease and stroke - together accounting for more than half (55%) of all deaths.

# State accounts



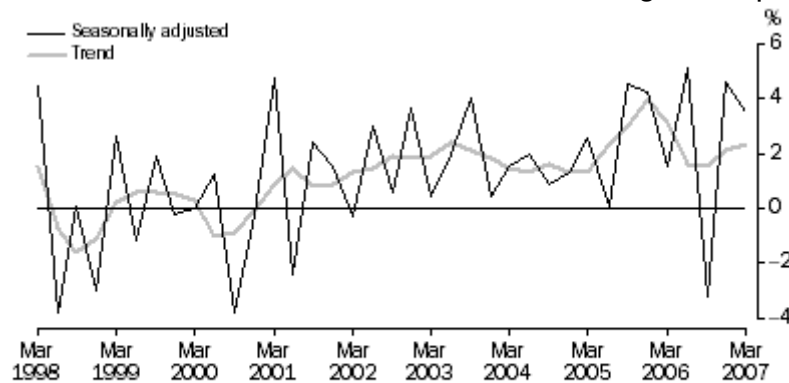
## STATE ACCOUNTS

### STATE FINAL DEMAND

Western Australia's state final demand (trend chain volume measures) grew 2.3% (\$643 million) to \$28,077 million in the March quarter 2007, following increases of 1.5% and 2.1% in the September and December quarters of 2006 respectively. Current quarter growth exceeded that of all other states and territories, with other results ranging from -0.1% in the

Northern Territory to 1.5% in Queensland. Nationally, domestic final demand increased 1.1% in the March quarter 2007.

### STATE FINAL DEMAND, Chain volume measures - Change from previous quarter



In seasonally adjusted chain volume terms, Western Australia's state final demand rose 3.5% (\$952 million) to \$28,418 million in March quarter 2007, due mainly to an increase in private gross fixed capital formation (up 7.6% or \$700 million). Private investment grew 10.8% (\$394 million) in non-dwelling construction and 10.5% (\$287 million) in machinery and equipment. Final consumption expenditure also contributed to March quarter growth, with household consumption up 1.6% (\$214 million) and government consumption up 0.8% (\$31 million). Household consumption was mainly driven by increased spending on hotels, cafes and restaurants (up \$42 million or 5.6%), recreation and culture (up \$30 million or 1.8%), food (up \$29 million or 1.9%) and the purchase of vehicles (up \$28 million or 4.6%).

Major detractors from growth in Western Australia's state final demand in the March quarter 2007 were gross fixed capital formation by public corporations (down \$35 million or 6.0%) and private sector ownership transfer costs (down \$29 million or 6.4%). Public corporation investment was down mainly due to the reclassification of Telstra Corporation from a public to private sector non-financial corporation in the March quarter 2007, following its privatisation on 20 November 2006.

## Prices



### PRICES

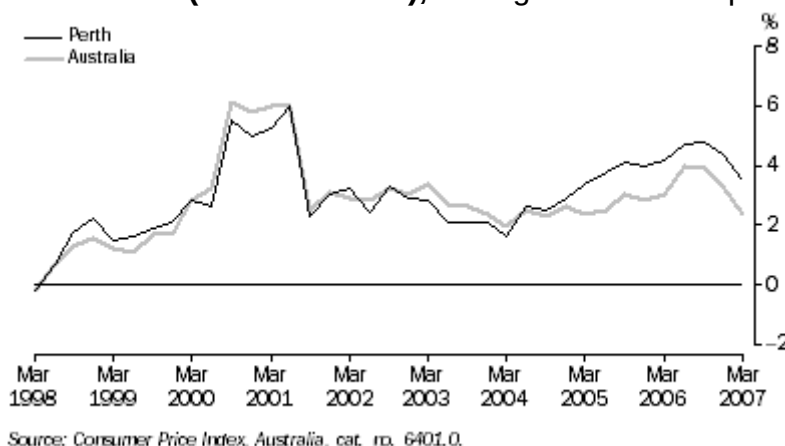
#### CONSUMER PRICE INDEX

Growth in Perth's consumer price index (CPI) continued to slow over the last three quarters, from a peak of 1.8% in the June quarter 2006 to 0.2% in the March quarter 2007. Current quarter growth was the lowest since the June quarter 2003 (0.0%), but remained above national CPI growth of 0.1%. The slowing in Perth's CPI growth was mainly due to declining prices for fruit (down 28.1%), furniture (down 5.3%) and holiday travel and accommodation

(domestic down 3.6% and overseas down 4.6%). Fruit prices were lower in all capital cities mainly due to falling banana prices, as production returned to normal levels following extensive crop damage in Queensland from Cyclone Larry in the March quarter 2006. Price falls for holiday travel and accommodation came after a seasonal spike in accommodation tariffs and airfares in the December quarter 2006.

Perth's CPI growth in the March quarter 2007 was mostly driven by price increases in housing (up 1.1%), education (up 8.0%) and health (up 3.5%). Housing continued to underpin prices growth in Perth, as house purchase costs (up 1.1%) and rents (up 2.6%) continued to climb, while the price of education and health are invariably higher in the first quarter of each calendar year. Education costs rise due to one-off price increases associated with the commencement of the new school year and health costs increase from the reduction in consumers who qualify for subsidised medications under the Pharmaceuticals Benefit Scheme.

#### **CONSUMER PRICE INDEX (ALL GROUPS), Change from same quarter previous year**

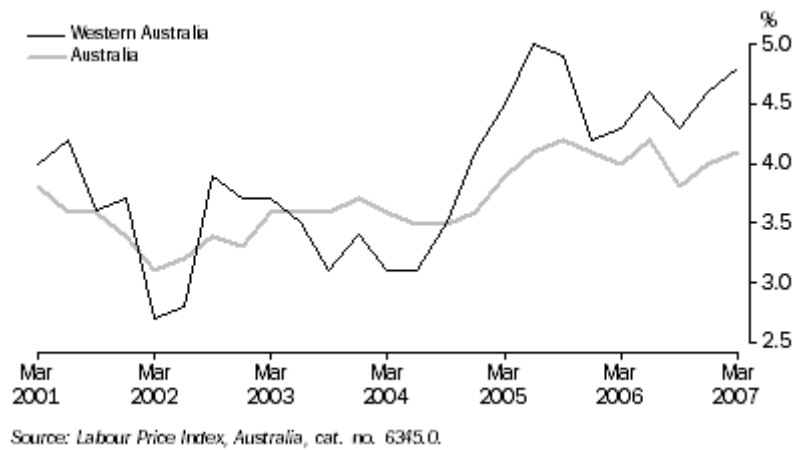


Perth's CPI rose 3.5% through the year to March quarter 2007, a rate that has continued to decline from a peak of 4.8% through the year to September quarter 2006. Perth's 3.5% CPI growth was the 2nd largest among the states and territories, behind Darwin with an increase of 4.0% through the year. National CPI growth followed a similar downward trend to Perth, declining from 4.0% through the year to June quarter 2006 to 2.4% through the year to March quarter 2007 - the lowest annual rise since the March quarter 2005 (2.4%). The underlying inflation rate, as calculated by the Reserve Bank of Australia (RBA), moderated to 2.7% through the year to March quarter 2007, well within the RBAs target range for inflation of 2 to 3 percent. Notably, the CPI headline inflation rate of 2.4%, eased more markedly than the RBA underlying rate, mainly due to price falls in the volatile items of fuel and food in recent quarters.

#### **WAGE PRICE INDEX**

Growth in Western Australia's wage price index (WPI) of total hourly rates of pay excluding bonuses remained steady at 1.1% in the March quarter 2007, following increases of 1.3% and 1.1% in the September and December quarters of 2006 respectively. In the March quarter 2007, wages rose 1.2% in the private sector, more than twice the rate of public sector wages (up 0.5%). Nationally, the WPI also grew 1.1% in the current quarter, following an increase of 1.0% in the December quarter 2006.

#### **WAGE PRICE INDEX, Change from same quarter previous year**



Western Australia's WPI rose 4.8% through the year to March quarter 2007, higher than the 4.6% rise in the previous period and higher than national wages growth of 4.1%. Strong wages growth was recorded in the Western Australian industries of construction (up 6.8%), personal and other services (up 6.8%) and mining (up 6.7%). From an occupation perspective, wages growth was strong for labourers and related workers, and tradespersons and related workers, both up 5.9%.

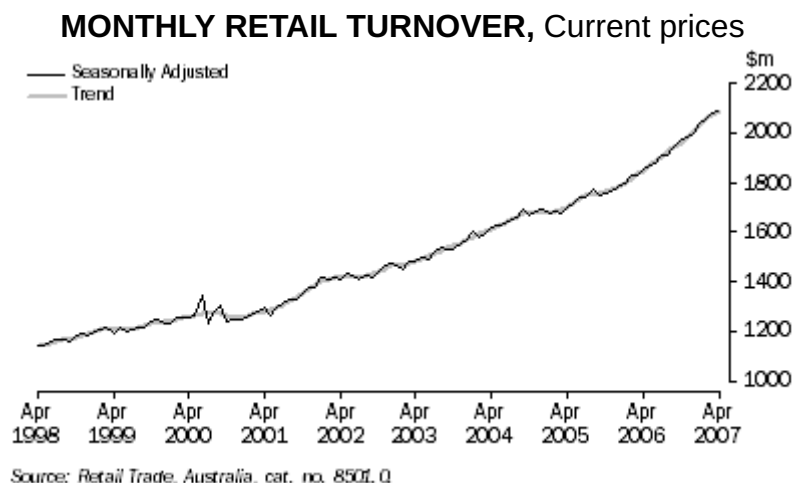
## Consumption



### CONSUMPTION

#### RETAIL TRADE

Western Australia recorded a total of \$6,220 million in retail turnover (trend) in the three months to April 2007, an increase of 3.2% (\$191 million) on the previous three month period. This growth was slightly lower than the 3.4% rise recorded in the three months to January 2007. The nation's retail turnover increased 2.0% in the three months to April 2007, following a rise of 1.6% in the previous three month period.



Growth in Western Australia's retail turnover (trend) in the three months to April 2007 (compared to the previous three months) was primarily driven by the industry groups of food (up \$85 million or 3.4%), hospitality and services (up \$37 million or 4.7%) and other retailing (including pharmaceuticals, cosmetics, toiletries, antiques and used goods, garden supplies, flowers, watches and jewellery) (up \$28 million or 4.9%). In contrast, recreational good retailing experienced a decrease of \$9 million (3.2%).

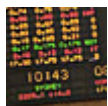
## NEW MOTOR VEHICLE SALES

Sales of new motor vehicles (trend) rose consecutively over the last 16 months in Western Australia, from 8,701 vehicles in January 2006 to 9,970 vehicles in May 2007 - an increase of 1,269 vehicles (14.6%). Passenger vehicles drove much of the growth in new motor vehicle sales over the period (up 560 vehicles or 11.3%), with sales of other vehicles (comprising utilities, vans, trucks and buses) (up 392 vehicles or 19.3%) and sports utility vehicles (up 317 vehicles or 18.6%) also making strong contributions.



Over the three months to May 2007, Western Australia's new motor vehicle sales rose 1.0% (305 vehicles) to 29,863 vehicles in trend terms, compared to the previous three month period. The sole driver of growth was other vehicle sales, rising 6.1% (409 vehicles), while sports utility vehicles (down 0.9% or 53 vehicles) and passenger vehicles (down 0.3% or 51 vehicles) both recorded declining sales over the period.

## Investment and finance



### INVESTMENT AND FINANCE

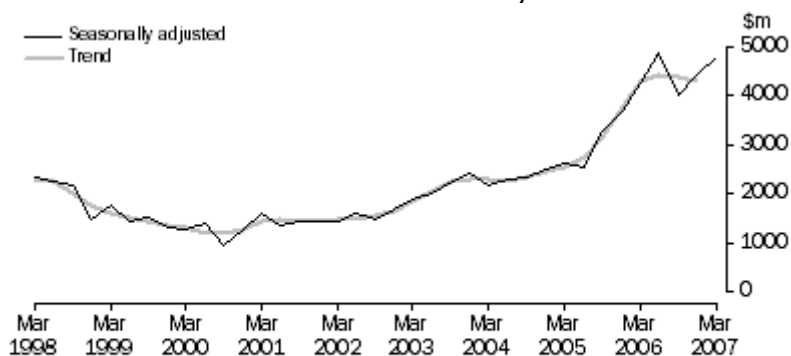
#### PRIVATE NEW CAPITAL EXPENDITURE

In seasonally adjusted chain volume terms, business investment in Western Australia rose 8.9% (\$389 million) in the March quarter 2007, slightly down on the rise of 10.4% (\$413 million) in the previous quarter. These consecutive periods of strong growth have lifted business investment to its 2nd highest quarterly level on record at \$4,780 million, just \$60 million less than the historically high of \$4,840 million in the June quarter 2006. In the latest

quarter, almost two-thirds of the growth in business investment was in buildings and structures (up \$238 million or 8.4%) and the rest was in equipment, plant and machinery (up \$150 million or 9.6%).

Trend data for the March quarter 2007 was not available for publication due to a break in series caused by the recent privatisation of Telstra Corporation on 20 November 2006. For the purposes of ABS statistics this change from public to private sector is effective from the March quarter 2007. For more information please see Information Paper: Future Treatment of Telstra in ABS statistics, 2007 (cat. no. 8102.0), released 26 February 2007.

#### PRIVATE NEW CAPITAL EXPENDITURE, Chain volume measures



Note: Break in trend series between the December quarter 2006 and March quarter 2007.

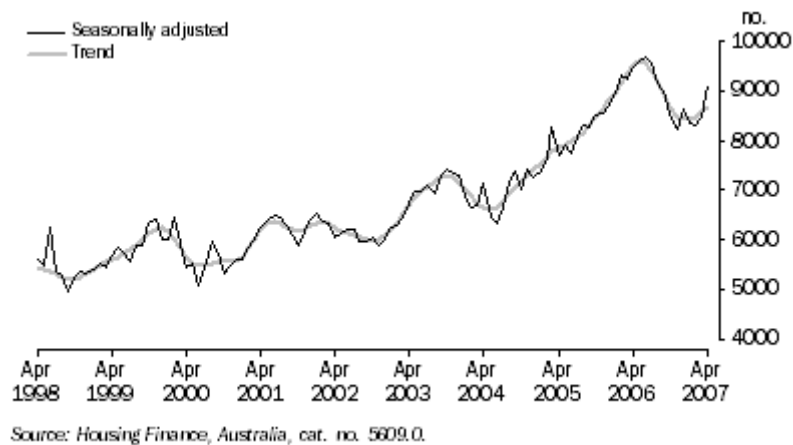
Source: *Private New Capital Expenditure and Expected Expenditure, Australia*, cat. no. 5625.0.

In original current prices terms, Western Australia's business investment rose 17.9% (\$709 million) to \$4,670 million through the year to March quarter 2007. This rise was mainly driven by increased investment in the mining industry, up 23.8% (\$622 million) to \$3,237 million, as well as an 18.4% rise in investment in other selected industries (including retail trade, property and business services and construction) (up \$166 million to \$1,066 million). Manufacturing industry investment, however, fell 17.5% (\$78 million) to \$368 million through the year.

#### HOUSING FINANCE COMMITMENTS

The number of dwellings financed for owner occupation (trend) in Western Australia recovered from 7 consecutive months of decline between May 2006 (9,602 commitments) and December 2006 (8,423 commitments), to rise in each of the last 4 months to 8,703 commitments in April 2007. In the three months to April 2007, the number of dwellings financed for owner occupation rose 1.7% (422 commitments) in Western Australia (compared to the previous three month period), following a 5.5% (1,486 commitments) decline in the three months to January 2007.

#### HOUSING FINANCE COMMITMENTS, Number of dwellings financed



In original terms, the total value of housing finance for owner occupation in Western Australia increased 3.0% (\$163 million) in the three months to April 2007, compared to the previous three month period. Growth was entirely driven by the value of housing finance for non-first home buyers, rising 4.1% (\$195 million), partially offset by a 4.8% (\$32 million) fall in the value of housing finance for first home buyers. The difference between the average loan size for first home buyers and non-first home buyers has widened considerably in Western Australia in recent months. In January 2007, the average loan size for non-first home buyers (\$220,800) was \$3,900 higher than for first home buyers (\$216,900), but by April 2007 this gap had widened to \$22,400 - \$218,500 (non-first home buyers) compared to \$196,100 (first home buyers). In the three months to April 2007, the total value of housing finance for investment (original) rose 5.2% (\$122 million) in Western Australia, compared to the previous three month period.

## Construction



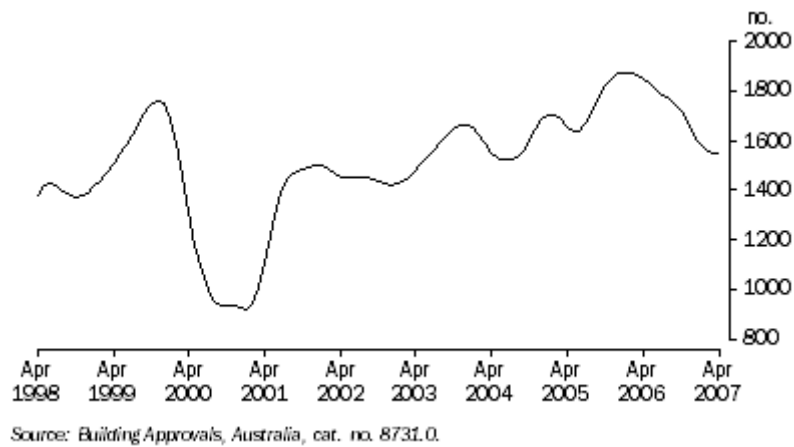
### CONSTRUCTION

#### BUILDING APPROVALS

In the three months to April 2007, the total number of house approvals (trend) fell 4.6% (226 approvals) in Western Australia, compared to the previous three month period, while the total number of non-house approvals fell 19.3% (245 approvals).

#### NUMBER OF DWELLINGS APPROVED, Houses: Trend

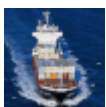




The number of house approvals (trend) in Western Australia declined for 14 consecutive months between January 2006 (1,877) and March 2007 (1,550), with this downward trend ending with a slight increase in house approvals in April 2007 (1,553). During the period of decline, house approvals fell 1.5% (23 approvals) on average per month, significantly lower than the average monthly decline of 6.5% (60 approvals) during the last major downturn in the building cycle between November 1999 and January 2001 (coinciding with the introduction of the GST). Similarly, the number of non-house building approvals (including other residential and non-residential building) have fallen successively over the past 7 months, from a peak of 468 approvals in September 2006 to 321 approvals in April 2007.

The current downturn in Western Australia's building cycle follows three interest rate increases by the Reserve Bank of Australia of 0.25% in May (5.75%), August (6.00%) and November (6.25%) 2006, and coincides with a large increase in new house prices in Perth (up 9.0% excluding land) between the March quarters of 2006 and 2007.

## Trade

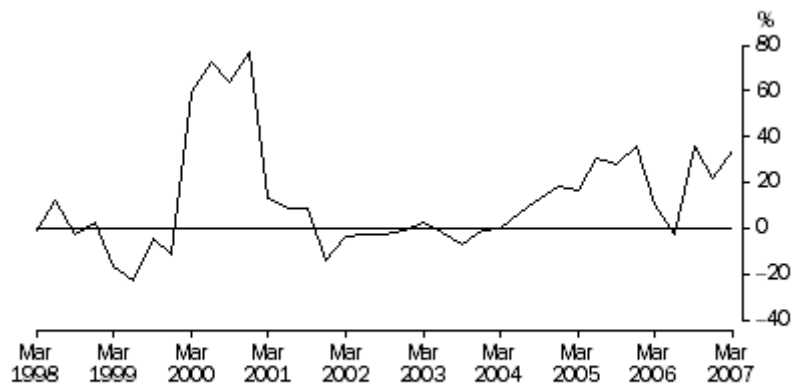


### TRADE

#### BALANCE OF TRADE

Western Australia's trade surplus grew 34.2% (\$2,196 million) to \$8,615 million through the year to March quarter 2007. However, it was 13.5% (\$1,349 million) lower than the surplus in the preceding period of \$9,964 million - the highest surplus on record.

**VALUE OF WESTERN AUSTRALIA'S TRADE SURPLUS**, Change from same quarter previous year



Source: ABS data available on request, *International Trade in Goods and Services, Australia*, cat. no. 5368.0.

China was by far the leading contributor to growth in Western Australia's trade surplus through the year to March quarter 2007. The state's trade surplus with China rose 52.0% (\$1,002 million) to \$2,931 million, while other major contributors with large trade surpluses were India (up \$405 million), Switzerland (up \$349 million) and the Republic of Korea (up \$316 million). Notably, Western Australia's trade surplus with Switzerland rose from \$28 million to \$377 million between the March quarters of 2006 and 2007, mainly due to a large increase in gold exported to that country. Partially offsetting these increases was a large fall in the state's trade surplus with the United Kingdom (down \$245 million), and worsening trade deficits with Singapore (up \$106 million) and Indonesia (up \$100 million).

## EXPORTS

The value of Western Australia's exports rose 27.7% (\$3,113 million) to \$14,359 million through the year to March quarter 2007. Major commodities contributing to growth were non-monetary gold (up \$844 million or 50.4%), iron ore and concentrates (up \$667 million or 23.4%), combined confidential items (up \$634 million or 33.2%) and crude petroleum oils (up \$476 million). Major commodities detracting from exports growth were natural gas (down \$39 million or 4.0%), refined petroleum oils (down \$36 million or 26.2%), and crustaceans, molluscs and aquatic invertebrates (down \$27 million or 22.3%).

## IMPORTS

The value of imports to Western Australia increased 19.0% (\$917 million) to \$5,744 million through the year to March quarter 2007. Passenger motor vehicles (up \$99 million or 38.0%), motor vehicles for transporting goods (up \$72 million or 38.7%) and fertilisers (up \$33 million or 36.2%) were the major commodities contributing to imports growth. The largest fall was in non-monetary gold imports, down \$79 million or 6.2% through the year..

## Mining

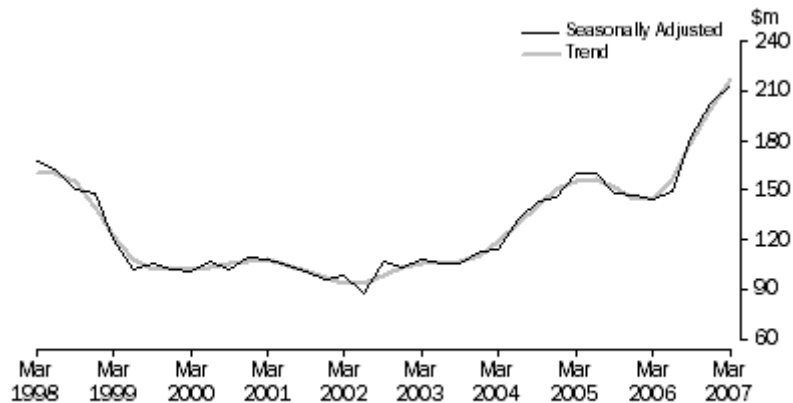


**MINING**

## MINERAL AND PETROLEUM EXPLORATION EXPENDITURE

Expenditure on mineral exploration (trend) in Western Australia rose 9.2% (\$18 million) to \$217 million in the March quarter 2007, the 5th successive quarterly rise since the December quarter 2005 (\$145 million). During this period, mineral exploration expenditure grew at an average rate of 8.5% per quarter, significantly higher than the rate recorded during the exploration boom of the mid-1990s (5.1% per quarter over the 8 quarters to June 1997). The current level (\$217 million) of Western Australia's mineral exploration expenditure is \$34 million higher than the previous peak of \$183 million in the June quarter 1997.

**MINERAL EXPLORATION EXPENDITURE, Total minerals**



Source: Mineral and Petroleum Exploration, Australia, cat. no. 8412.0.

In original terms, Western Australia's mineral exploration expenditure rose 48.1% (\$58 million) to \$180 million through the year to March quarter 2007. Growth was recorded across all major minerals, with the largest increases in iron ore (up \$19 million or 60.0%), nickel, cobalt (up \$18 million or 89.8%) and gold (up \$10 million or 18.6%). Increases in mineral exploration activity have coincided with rising world commodity prices over the 12 months to March 2007, especially for nickel (up 211.0%) and gold (up 17.6%). The state's petroleum exploration expenditure more than doubled to \$320 million through the year to March quarter 2007 (up 133.2% or \$183 million).

## MINERAL AND ENERGY PRODUCTION

Between the March quarters of 2006 and 2007, production increased across most mineral and energy commodities in Western Australia. Minerals recording increases were nickel (up 14.3%), iron ore (up 10.7%), bauxite (up 9.6%) and ilmenite (up 5.9%). In contrast, zinc (down 37.5%), diamonds (down 31.7%) and gold (down 5.0%) production declined. Energy production in Western Australia rose for crude oil (up 35.1%), electricity (up 6.9%) and natural gas (up 6.4%) through the year.

## Tourism



### TOURISM

## **SHORT-TERM ARRIVALS ON HOLIDAY**

A total of 63,151 overseas visitors arrived in Western Australia for holiday in the March quarter 2007. During the period, the United Kingdom and Ireland recorded the largest number of holidaymakers coming to Western Australia with 22,512 - an increase of 1,077 persons (5.0%) from the March quarter 2006. Singapore had the next highest increase in travellers to the state (up 989 persons or 15.1%), followed by South Africa (up 575 persons or 65.3%). In contrast, there were less holidaymakers coming from Japan (down 1979 persons or 25.5%), Thailand (down 370 persons or 30.7%) and Hong Kong (down 280 persons or 16.3%) through the year to March quarter 2007.

## **SHORT-TERM DEPARTURES ON HOLIDAY**

In the March quarter 2007, there were 12,138 (22.9%) more Western Australian residents departing on holiday, compared to the same quarter of 2006. Overseas destinations recording the largest increase in Western Australian travellers were Indonesia (up 5,169 persons or 62.6%), Thailand (up 2,529 persons or 37.1%) and the United Kingdom and Ireland (up 935 persons or 37.8%). Overseas countries experiencing a declining number of Western Australian visitors through the year were Hong Kong (down 663 persons or 26.6%) and Singapore (down 155 persons or 2.6%).

## **Labour market**



### **LABOUR MARKET**

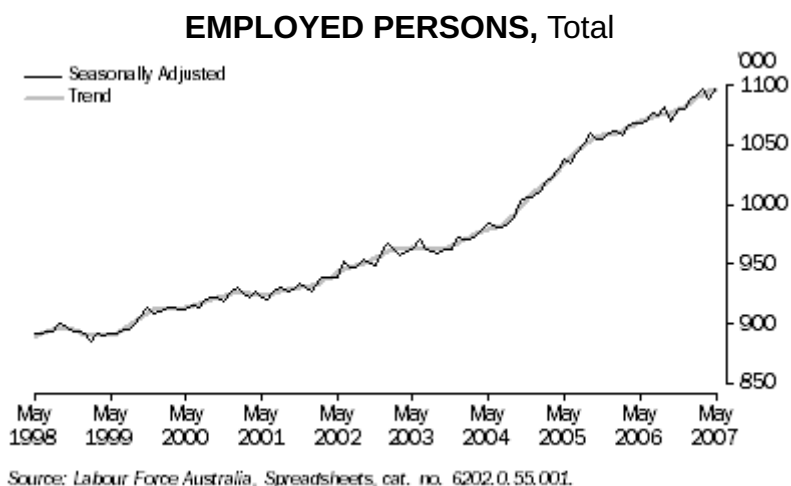
### **JOB VACANCIES**

The number of job vacancies have risen for 6 consecutive quarters in Western Australia, increasing 4.6% (1,100) in the February quarter 2007. Sustained quarterly growth has led to a yearly increase in job vacancies of 21.4% (4,400) between the February quarters of 2006 and 2007. Of the 25,000 job vacancies recorded in the February quarter 2007, 94.8% (23,700) were private sector vacancies and 5.2% (1,300) were public sector vacancies. Private sector job vacancies grew 5.3% (1,200) in the February quarter 2007 and 22.8% (4,400) through the year to February quarter 2007. The rise in Western Australia's job vacancies indicates employment should also continue to grow through mid-2007, as long as jobs can be suitably filled by the available labour supply.

### **EMPLOYMENT**

Western Australia's full-time employment (trend) rose 0.3% (up 2,600 persons) to 776,100 persons in the three months to May 2007, following growth of 0.7% (5,400 persons) in the previous three month period. All of the increase in the last three months was attributable to female full-time employment rising 1.1% (2,800 persons), partially offset by declining male full-time employment (down 200 persons). Estimated part-time employment in Western Australia rose 1.4% (4,400 persons) to 320,800 persons in the three months to May 2007, mainly attributable to increased male part-time employment (up 4.8% or 4,000 persons).

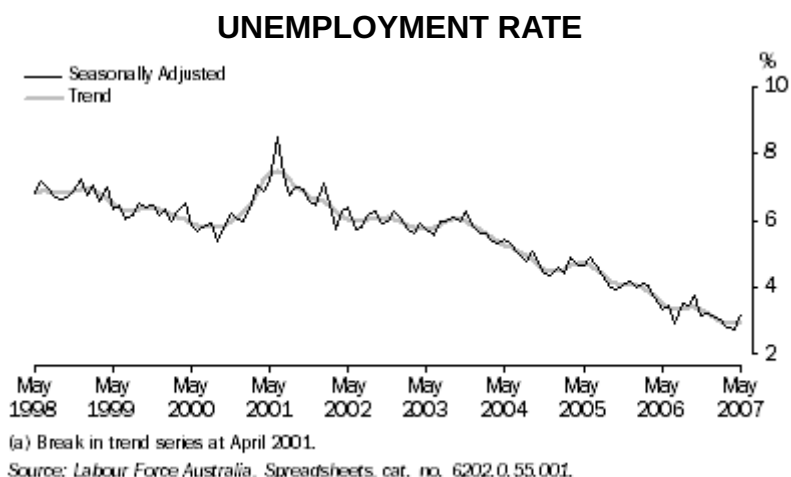
Female part-time employment was up 0.4% (400 persons). Overall, employment rose 0.6% (7,000 persons) to 1,096,900 persons in the three months to May 2007.



The main industries contributing to the rise in Western Australia's employment (original) through the year to May 2007 (up 30,700 persons or 2.9%) were property and business services (up 10,000 persons or 8.1%), education (up 6,900 persons or 10.0%) and government administration and defence (up 5,200 persons or 11.3%). From an occupation perspective, the main occupations driving the state's employment growth were professionals (up 26,800 persons or 14.4%), associate professionals (up 9,100 persons or 6.8%) and intermediate production and transport workers (up 8,200 persons or 8.7%).

## UNEMPLOYMENT

The number of unemployed persons (trend) fell 1.5% (500 persons) to 33,300 persons in Western Australia in the three months to May 2007, solely attributable to the number of unemployed males declining 5.7% (1,000 persons), partly offset by increasing female unemployed (up 3.0% or 500 persons). The unemployment rate (trend) in Western Australia fell marginally, from 3.0% in February 2007 to 2.9% in May 2007. Nationally, the unemployment rate also declined, from 4.5% to 4.3% between February and May 2007.



## Population



## **POPULATION**

### **ESTIMATED RESIDENT POPULATION**

The preliminary estimated resident population for Western Australia was 2,080,966 in the December quarter 2006, an increase of 11,089 persons (0.54%) from the previous quarter. The state's quarterly population growth was the highest across the nation, ahead of Queensland (up 0.53%) and well above the national increase of 0.35%. In the December quarter 2006, Western Australia recorded a natural increase of 4,115 persons (7,070 births less 2,955 deaths), while net overseas migration (up 6,042 persons) and net interstate migration (up 932 persons) also added to the state's population.

## **Social trends**



## **SOCIAL TRENDS**

### **POPULATION AND HEALTH**

#### **Population characteristics**

In June 2006, Western Australia's estimated resident population was 2.06 million persons. This was an increase of 41,700 persons (2.1%) from June 2005 and 293,800 persons (17%) from June 1996. In percentage terms, Western Australia's population growth of 17% between June 1996 and June 2006 was higher than the national average of 13% and was the 2nd highest among the states and territories behind Queensland with 23% .

In June 2006, the median age (the age at which half the population is older and half is younger) of the Western Australian population was 36.2 years. This is slightly younger than the national median age of 36.6 years. The median age of the Western Australian population increased from 33.1 years in 1996.

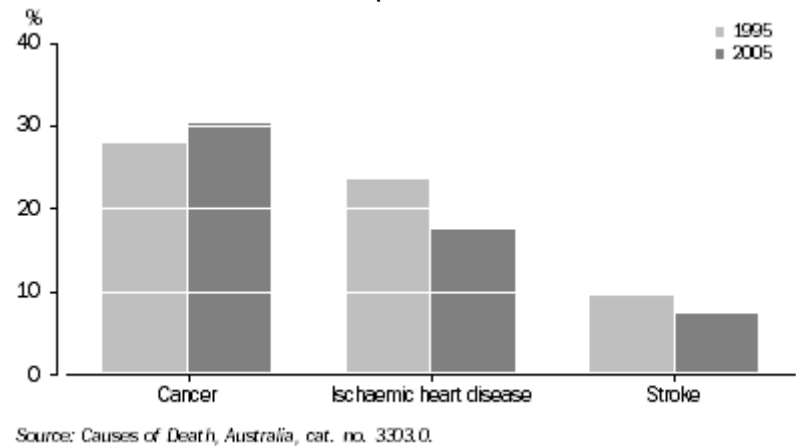
The ratio of males to females aged 0-64 years was similar in both 1996 and 2006 (104.0 and 104.5 males per 100 females respectively). However, for those aged 65 years and over, the ratio increased from 79.2 to 84.9 males per 100 females over the same ten year period. In 2005, life expectancy at birth was 83.8 years for females and 78.8 years for males in Western Australia. Between 1996 and 2005, the difference in life expectancy between males and females fell from 5.9 to 5.0 years.

#### **Causes of death**

In 2005, there were 11,300 deaths registered in Western Australia. The underlying causes of death were mainly cancer (malignant neoplasms), ischaemic heart disease and stroke - together accounting for more than half (55%) of all deaths. Cancer was the leading

underlying cause of 3,400 deaths (30% of all deaths). Of those deaths, 21% (720) were caused by cancers of the trachea, bronchus and lungs. From 1995 to 2005, the proportion of deaths caused by cancer increased from 28% to 30%. Ischaemic heart disease accounted for 18% (2,000) of deaths in 2005, a decrease from 23% of deaths in 1995. Stroke accounted for 7.4% (840) of deaths in 2005, slightly lower than in 1995 (9.6%).

**LEADING CAUSES OF DEATH, Proportion of total deaths - Western Australia**



In 2005, the leading cause of death for persons aged 15-24 years in Western Australia was transport accidents, accounting for 35% (50 deaths) of deaths in this age group. The proportion was higher for males than females (36% compared to 32% respectively). Suicide accounted for 19% of deaths in the 15-24 year age group, a much higher proportion of males than females (23% compared to 7.9% respectively).

## List of Historical Feature Articles



### List of Historical Feature Articles

Issue	Title
Jun 2007	Research and experimental development in Western Australia General Social Survey - Western Australian summary Changing water and energy use in Perth homes
Mar 2007	The resources industry in Western Australia: 2001-02 to 2005-06 The agriculture industry in Western Australia
Dec 2006	Pathways in education and related outcomes in Western Australia Drivers of Perth's rising prices International trade in Western Australia: 2003-04 to 2005-06
Sep 2006	<u>Measures of Western Australia's progress</u> <u>Western Australians on the move - A housing perspective</u>
Jun 2006	Labour force trends in Western Australia Selected statistics for Aboriginal and Torres Strait Islander people in Western Australia
Mar 2006	Skills shortages in Western Australia - Part 2 Household expenditure in Western Australia

Dec 2005	<a href="#"><u>Skills shortages in Western Australia - Part 1</u></a>
	<a href="#"><u>State accounts - A snapshot of Western Australia's economy in 2004-05</u></a>
Sep 2005	<a href="#"><u>Youth in regional Western Australia</u></a>
Jun 2005	<a href="#"><u>Western Australia's changing trade relations - The emergence of China and India</u></a>
	<a href="#"><u>Disability, ageing and carers in Western Australia</u></a>
Mar 2005	<a href="#"><u>Components of Western Australia's economic growth</u></a>
	<a href="#"><u>Social interactions and support in Western Australia</u></a>
Dec 2004	<a href="#"><u>The impact of rising house prices on the WA economy</u></a>
	<a href="#"><u>State accounts: A snapshot of WA's economy in 2003-04</u></a>
Sep 2004	<a href="#"><u>Intra-state migration</u></a>
Jun 2004	<a href="#"><u>Household water conservation and use in Western Australia</u></a>
Mar 2004	<a href="#"><u>Regional wage and salary earners in Western Australia</u></a>
	<a href="#"><u>The impact of migration on Western Australia's population</u></a>
Dec 2003	<a href="#"><u>The construction industry in Western Australia</u></a>
Sep 2003	<a href="#"><u>The winemaking industry in Western Australia</u></a>
Jun 2003	<a href="#"><u>Population measures: A case study</u></a>
	<a href="#"><u>Salinity and land management on Western Australia farms</u></a>
Mar 2003	<a href="#"><u>Demystifying chain volume measures</u></a>
Dec 2002	<a href="#"><u>Western Australia: A small area perspective</u></a>
Sep 2002	<a href="#"><u>Western Australia's age and sex distribution</u></a>
Jun 2002	<a href="#"><u>The resources industry in Western Australia</u></a>
	<a href="#"><u>Understanding population measures</u></a>
Mar 2002	<a href="#"><u>Interpreting time series data</u></a>
Dec 2001	<a href="#"><u>A view of housing density in Perth</u></a>
	<a href="#"><u>Educational participation in Western Australia</u></a>
Sep 2001	<a href="#"><u>A century of population change in Western Australia</u></a>
	<a href="#"><u>Foreign capital expenditure in Western Australia</u></a>
Jun 2001	<a href="#"><u>Use of information technology in Western Australia</u></a>
	<a href="#"><u>Methods of setting pay in Western Australia</u></a>
Mar 2001	<a href="#"><u>Crime and safety in Western Australia</u></a>
Dec 2000	<a href="#"><u>Small business in Western Australia</u></a>
Sep 2000	<a href="#"><u>Western Australia's' merchandise trade with the rest of the world</u></a>

## About this Release

Contains the most recent statistics for Western Australia covering: state accounts; prices; consumption; investment and finance; construction; trade; mining and energy; agriculture; tourism; labour market; population; crime; and social trends. Quarterly issues include an analysis of recent movements in key state data, as well as feature articles reviewing aspects of Western Australia's economy and/or society.

## Research and experimental development in Western Australia (Feature Article)

**FEATURE ARTICLE 1: RESEARCH AND EXPERIMENTAL DEVELOPMENT IN WESTERN AUSTRALIA**



## INTRODUCTION

A recent report by the Productivity Commission 'Public Support for Science and Innovation' (9 March 2007) identified Research and Experimental Development (R&D) as an important source of economic growth through its contribution to increased productivity. It is not surprising, therefore, that Western Australia's recent economic boom has coincided with strong growth in the state's investment in R&D. This article examines results from the 2004-05 suite of ABS R&D surveys, highlighting the extent to which Western Australia's R&D expenditure has grown in recent years and the sectors of the economy responsible for that growth.

## ABOUT THE DATA

R&D as collected by the ABS is defined in accordance with the OECD standard as comprising 'creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications'. Recent ABS publications relating to R&D include:

- Research and Experimental Development, Businesses, 2004-05 (cat. no. 8104.0);
- Research and Experimental Development, Higher Education Organisations, 2004 (cat. no. 8111.0);
- Research and Experimental Development, Government and Private Non-profit Organisations, 2004-05 (cat. no. 8109.0); and
- Research and Experimental Development, All Sector Summary, 2004-05 (cat. no. 8112.0).

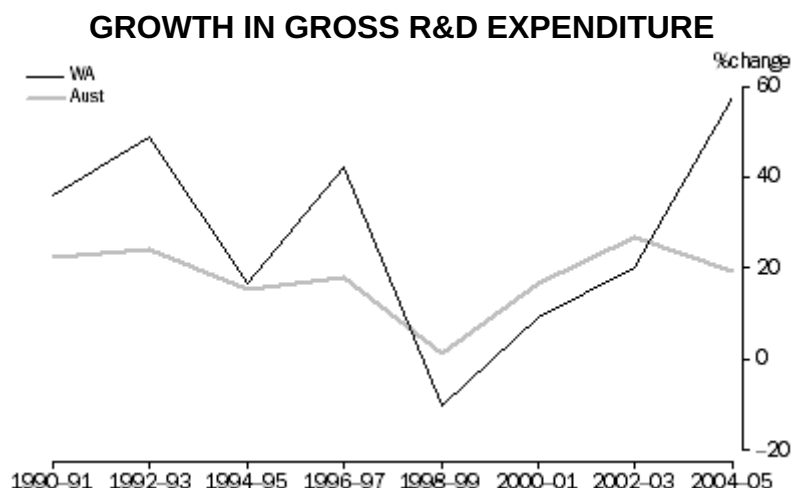
## GROWTH IN WESTERN AUSTRALIA'S R&D EXPENDITURE

Since declining briefly in the late 1990s, expenditure on R&D in Western Australia has risen sharply. Between 1998-99 and 2004-05, gross expenditure on R&D in Western Australia more than doubled, rising from \$844 million to \$1,738 million. The largest part of this growth (70.9%), however, occurred between 2002-03 and 2004-05, when Western Australia's gross expenditure on R&D increased 57.4% (\$634 million). Over this same period the state economy also surged, with Gross State Product (GSP) increasing 19.5% (\$16,796 million) in current price terms. With the state's gross R&D expenditure rising almost three times faster than its GSP, the proportion of GSP devoted to R&D grew substantially over the period (up from 1.3% to 1.7%).

**GROSS R&D EXPENDITURE, Western Australia**



The rapid rise in the level of R&D investment in Western Australia has, however, contrasted with a slowing of growth at the national level. As shown in the graph below, bi-annual growth in Western Australia's gross R&D expenditure rose from 20.1% in 2002-03 to 57.4% in 2004-05, while Australia's bi-annual growth fell from 26.8% to 19.4% over the same period. The states mainly responsible for the slowdown nationally were New South Wales and South Australia.

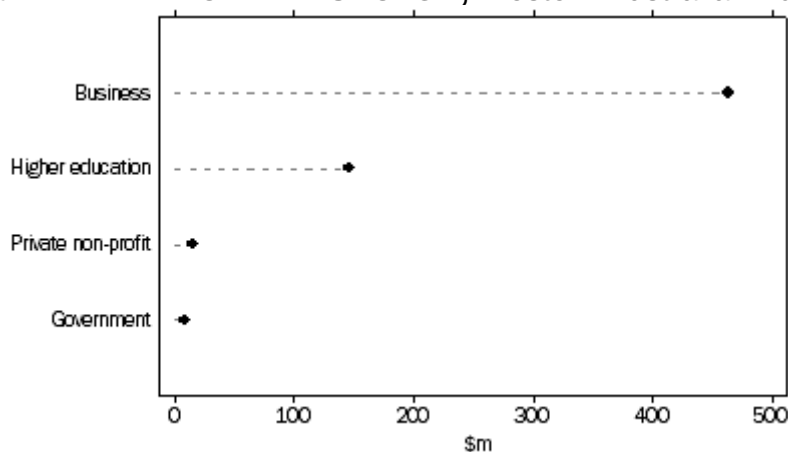


With Western Australia's gross R&D expenditure underpinning much of the growth at the national level, the state's contribution to Australian gross R&D expenditure increased from 8.4% in 2002-03 to 11.0% in 2004-05.

## WESTERN AUSTRALIA'S R&D EXPENDITURE BY SECTOR

The recent strong growth in Western Australia's R&D expenditure has primarily been driven by the state's business sector, although the higher education and private non-profit sectors also experienced large increases. By comparison, expenditure on R&D by the government sector (both State and Commonwealth) in Western Australia remained relatively stable. The contribution of each of these sectors to the state's R&D boom is discussed in more detail below.

### GROWTH IN R&D EXPENDITURE BY SECTOR, Western Australia - 2002-03 to 2004-05



# BUSINESS

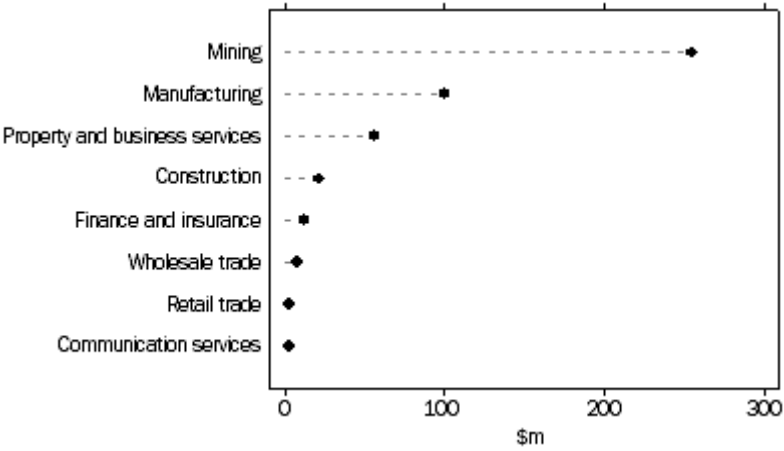
Between 2002-03 and 2004-05, Western Australia's business sector accounted for almost three quarters (73.0%) of the growth in the state's gross expenditure on R&D. Over this period, expenditure on R&D by businesses located in Western Australia increased 78.6% (\$463 million) to \$1,051 million, compared to a national increase of 21.7%. As a consequence, the state's share of national gross business expenditure on R&D increased from 8.5% to 12.4%. Over the same period, the business sector increased its share of Western Australia's gross expenditure on R&D from 53.3% to 60.5%.

**BUSINESS R&D EXPENDITURE, Western Australia**



While many factors have contributed to the surge in Western Australia's R&D expenditure, the expansion of the state's resources sector has had the largest impact on R&D investment. Between 2002-03 and 2004-05, the mining industry in Western Australia increased its expenditure on R&D 130% (\$255 million) to \$452 million. Other industries to report large increases in R&D expenditure during this period included, manufacturing (up 48.6% or \$100 million), property and business services (up 62.4% or \$56 million) and construction (up 43.7% or \$22 million).

**GROWTH IN R&D EXPENDITURE BY INDUSTRY, Western Australia - 2002-03 to 2004-05**



Within the mining industry, the strongest growth in R&D investment was recorded in metal ore mining (up \$134 million) and oil and gas extraction (up \$64 million) between 2002-03

and 2004-05. The strong resources sector also contributed to growth in R&D expenditure in other related industries such as machinery and equipment manufacturing (up \$46 million) and metal product manufacturing (up \$29 million).

### **GROWTH IN BUSINESS R&D EXPENDITURE, Top 5 industry classes - Western Australia**

Rank	Industry class	EXPENDITURE ON R&D (\$m)		GROWTH 2002-03 TO 2004-05	
		2002-03	2004-05	\$m	%
1	Metal ore mining	143	277	134	94.0
2	Oil and gas extraction	23	87	64	274.0
3	Services to mining	16	71	55	353.6
4	Machinery and equipment manufacturing	86	132	46	53.3
5	Metal product manufacturing	40	69	29	72.9

### **HIGHER EDUCATION**

The next largest contributor to growth in Western Australia's R&D expenditure was the higher education sector, which accounted for 23.0% of the total increase between 2002-03 and 2004-05. During this period, expenditure on R&D by the state's higher education sector increased 49.4% (\$146 million) to \$442 million, almost twice the national rise of 24.9%. As a consequence, Western Australia's share of national higher education R&D expenditure increased from 8.6% to 10.3%.

### **HIGHER EDUCATION R&D EXPENDITURE, Western Australia**



The recent rise in R&D expenditure by Western Australia's higher education sector coincided with a series of reforms of the sector by the Commonwealth Government (the 'Nelson Reforms'). Amongst other changes, the Nelson Reforms established a framework for research in which all Commonwealth funding is either competitive or performance-based. As a consequence, some universities have strengthened their R&D activity to differentiate themselves in competitive local and international markets.

### **PRIVATE NON-PROFIT**

Private non-profit organisations located in Western Australia accounted for 2.5% of the growth in the state's R&D expenditure between 2002-03 and 2004-05. Over this period, expenditure on R&D by the state's private non-profit sector increased 69.1% (\$15 million) to

\$38 million, almost twice the rate of growth nationally (37.2%). This increased Western Australia's share of national private non-profit expenditure on R&D from 6.2% in 2002-03 to 7.7% in 2004-05.

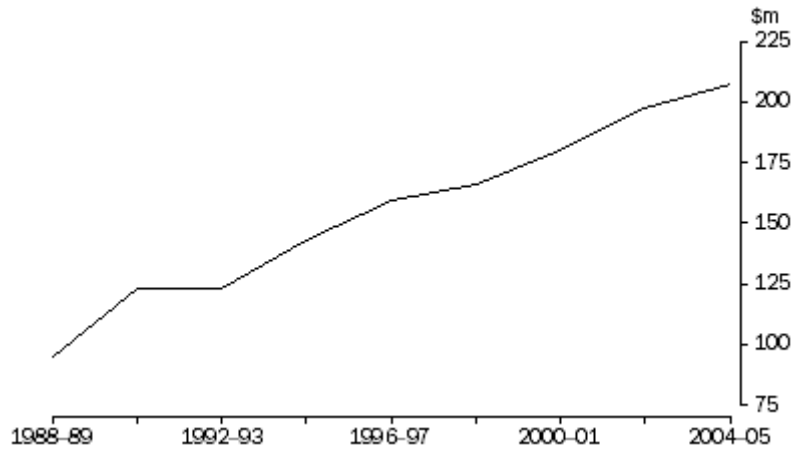
**PRIVATE NON-PROFIT R&D EXPENDITURE, Western Australia**



**GOVERNMENT**

Commonwealth and State Government organisations located in Western Australia accounted for the remaining 1.5% of growth in the state's R&D expenditure between 2002-03 and 2004-05. Over this period, expenditure on R&D by government organisations located in Western Australia increased 4.7% (\$9 million) to \$207 million, well below the corresponding levels of growth reported by other sectors. However, governments also invest in R&D through a range of funding programs and initiatives available to the business, higher education and private non-profit sectors. Between 2002-03 and 2004-05, the amount of R&D that was funded by Commonwealth and State Government sources increased 19.1% or \$1 billion nationally.

**GOVERNMENT R&D EXPENDITURE, Western Australia**



For further information about the ABS R&D survey program, including requests for more detailed data, please contact Kirsty Rothenbury on (08) 9360 5382.

# (Feature Article)

## FEATURE ARTICLE 2: GENERAL SOCIAL SURVEY - WESTERN AUSTRALIAN SUMMARY

### INTRODUCTION

There are many, often interrelated, aspects of life important to human wellbeing such as good health, good family relationships and engagement with wider social networks, freedom from financial stress, feeling safe and secure and having access to suitable transport and information technology. In 2006, the ABS conducted its second General Social Survey (GSS) (first in 2002), a multi-dimensional survey that provides valuable information on all these aspects of life for Australian adults (persons aged 18 years and over). This article summarises the results from the 2006 GSS for the Western Australian adult population, making comparisons between people of different age groups and household compositions.

The article also identifies where there have been changes in circumstances from the 2002 GSS for people living in Western Australia. These include:

- households experiencing less financial difficulties;
- a higher proportion of people reporting their health to be excellent or very good;
- an increase in the incidence of people reporting one or more personal stressors;
- a slightly higher proportion of people reporting they have been the victim of crime; and
- lower levels of participation in sport and physical recreation activities.

### GENERAL SOCIAL SURVEY: SELECTED CHARACTERISTICS

	Western Australia		Australia
	2002	2006	2006
	%	%	%
Personal characteristic			
Family and community(a)	90.1	88.0	87.0
Attendance at culture and leisure venues	91.1	91.3	88.6
Sport and physical recreation activities	76.2	70.4	62.2
Can easily get to places needed	86.5	87.8	84.1
Victim(b)	22.5	23.7	17.6
Experienced a personal stressor	59.6	62.8	59.3
Self assessed health status excellent or very good	59.1	61.8	57.0
Household characteristic			
Unable to raise \$2,000 in week for something important	12.7	10.0	13.1
Had at least one cash flow problem	21.8	17.2	17.7
Took at least one dissaving action	20.9	20.5	18.7
No consumer debt	47.7	55.5	58.8
Number of persons			
All persons aged 18 years or over ('000)	1 425	1 490	15 307

(a) Persons who had weekly contact with family or friends, could ask for small favours and able to get support in times of crisis.

(b) Victim of actual or threatened physical violence or victim of actual or attempted break-in.

ABS data available on request, 2002 and 2006 General Social Surveys.

### SOCIAL NETWORKS

It is generally accepted that family members living together provide each other with economic and emotional support, and that extended family and community networks are also important sources of support and contributors to people's wellbeing. Many people provide support to relatives living elsewhere, such as grandparents caring for grandchildren and children caring for elderly parents. Additionally, the daily interactions that people have with others in the community help build relationships, which provide greater access to sources of information and support in times of need.

People are described as having family and community support if they:

- had contact with family and friends living outside their household in the week prior to interview;
- could ask for small favours; and
- were able to receive support in a time of crisis from people living outside their household.

Of the 1,490,000 Western Australian resident adults (aged 18 years and over) covered by the 2006 GSS, 88% indicated that they had access to family and community support. High proportions (above 85%) were reported for both men and women, all age groups and across differing family and household types (including lone parents, couple families with or without dependents and people living alone).

## **CONTACT WITH FAMILY AND FRIENDS**

Almost all (97%) Western Australian adults had some form of contact with family and friends living outside the household in the week prior to the survey. Face to face contact with family and friends living outside the household on a weekly basis was reported by 82% of adults and an even higher proportion by other means of contact, such as telephone, mail and e-mail (94%).

Over the three month period prior to the survey, most Western Australian adults used a variety of methods to contact family and friends not living with them. A fixed telephone was the most common method (92%), followed by mobile phone calls (76%). More than half the adult population also used Short Message Service (SMS) (58%) or Internet communication, such as e-mail or chat rooms (53%) to keep in contact.

## **SOURCES OF SUPPORT**

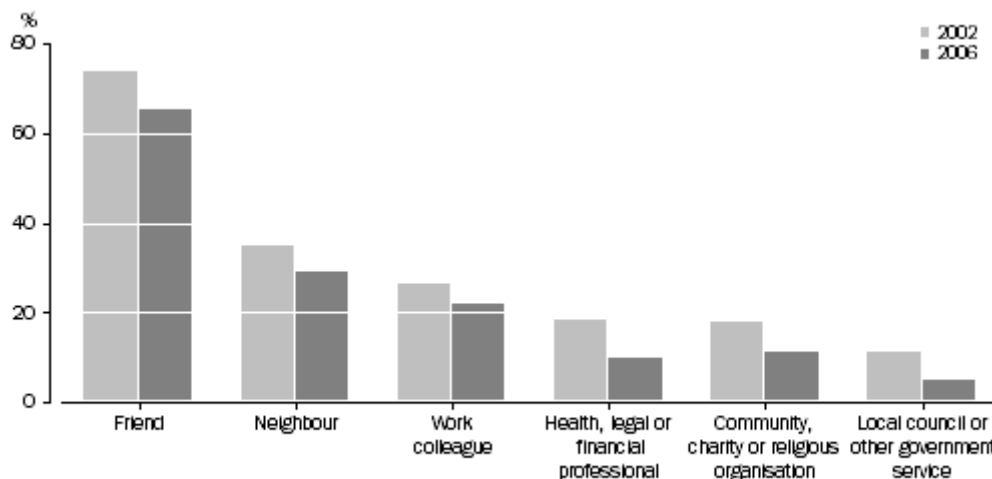
People may seek support from a variety of sources. Formal support is available through a range of government, professional and community organisations and a considerable amount of support is provided informally through people's networks of family, friends and work colleagues.

In 2006, 93% of adults in Western Australia reported they could ask people outside their household for small favours, such as looking after pets, collecting mail or borrowing equipment. Similarly, 94% felt they could obtain support in a time of crisis from people not living with them.

Similar to results from the 2002 GSS, 82% of Western Australian adults reported they could call on family members not living with them for support in a time of crisis in 2006. However, a lower proportion reported being able to call on many other sources of support at such times in 2006 than 2002. This was particularly evident in the case of:

- friends (65% compared to 74%);
- community, charity and religious organisations (12% compared to 18%);
- local councils or other government services (5% compared to 11%); and
- health, legal or financial professionals (10% compared to 18%).

#### SELECTED SOURCES OF SUPPORT IN TIME OF CRISIS, Western Australia



Source: ABS 2002 and 2006 General Social Surveys.

### SUPPORT TO RELATIVES LIVING OUTSIDE THE HOUSEHOLD

Family networks and support roles often extend beyond the household. Three important groups living outside the household to whom support is often provided are children aged under 18 years, children 18-24 years and other relatives.

#### CHILDREN AGED UNDER 18 YEARS

With increasing numbers of parents not living with their natural children, there is considerable interest in how relationships are maintained and the level of support provided to children in such situations. In 2006, 53,000 people in Western Australia stated that they had children aged 0-17 years who no longer lived with them. Most of these absent parents provided some form support for these children (84%). Over half (57%) of all absent parents of children in this age group provided Child Support Payments. Other frequently reported types of support included, providing or paying for clothing (46%), providing them with pocket money or an allowance (45%) and driving them places (42%).

#### CHILDREN AGED 18-24 YEARS

The age group 18-24 years is traditionally one where children move from being dependent on their parents to living independently. While some of these children live with parents or in the care of other families, many are living on their own or in group households. Material support from parents is often important in helping these young people to establish their independence.



In 2006, there were 135,000 people in Western Australia who had children aged 18-24 years who did not live with them. Almost two-thirds (62%) of people in this situation had provided support to these children in the previous year.

Just under a third (29%) of parents who had children 18-24 years living elsewhere provided them with assistance to pay bills or meet other debts. Other frequently reported forms of support were letting them borrow a car (23%), providing money for housing costs (23%), providing or paying for big cost items (such as cars, computers, housing appliances etc.) (22%) and driving them to places (22%).

## **OTHER RELATIVES**

In 2006, 30% of Western Australian adults were providing support to a relative (other than their own children aged under 25 years) who lived outside the household. The most common types of support provided were driving them places (15%), providing use of a car (8%), giving money to help pay bills or meet debts (6%) and giving spending money (6%). Persons aged 55-64 years (36%) were the most likely age group to be providing support to their relatives and those aged 18-24 years (21%) the least likely.

## **NETWORK TYPE AND LEVEL OF TRUST**

The 2006 GSS measured the diversity of people's social network of friends, in terms of similarity of age, educational background and ethnicity. For two-thirds (65%) of Western Australian adults, all or most of their friends were of a similar age to themselves. Young people aged 18-24 years (74%) were most likely to have friends of the same age, while those aged 75 years and over (57%) were least likely to do so.

Just over half (55%) of Western Australian adults indicated that all or most of their friends had a similar education background to themselves. A higher proportion (73%) reported having all or most of their friends from a similar ethnic background. There were no significant differences between age groups in terms of educational background or ethnicity of friends.

The 2006 GSS also assessed the level of trust respondents have in other people, including people in general and people associated with specific occupations and institutions. Just over half (56%) the Western Australian respondents felt that most people could be trusted. Higher levels of trust were indicated for people's own doctors (88%), local police (75%), hospitals (69%) and other police (66%). There were no significant differences in levels of trust between males and females. Similarly, levels of trust in general and for the selected professions and institutions were much the same for Western Australia and Australia.

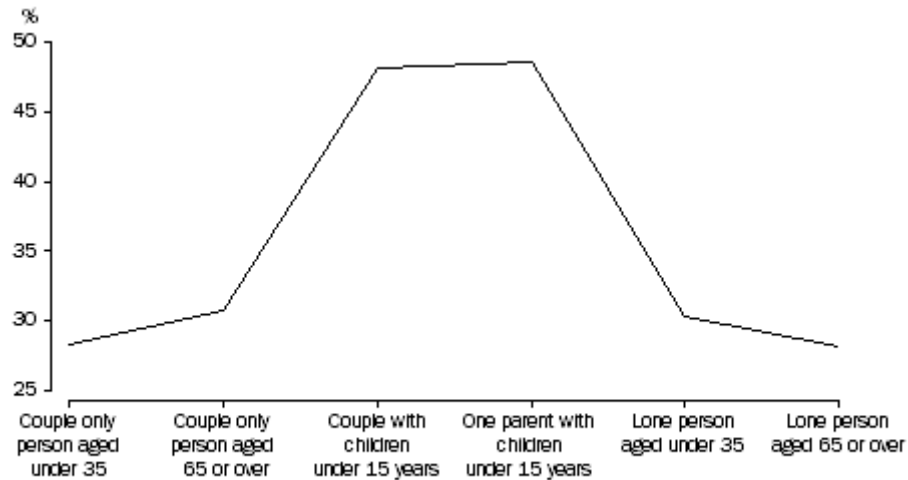
## **COMMUNITY INVOLVEMENT**

Many people provide support to the wider community by undertaking voluntary work for organisations. In 2006, 564,000 or 36% of Western Australian adults had done so in the previous 12 months which was similar to the national rate (34%). A higher proportion of

Western Australian women (39%) had undertaken voluntary work than men (34%). Rates were also higher for those aged 35-44 years (47%) and 45-54 years (41%) than for other age groups.

The rate of volunteering also varied lifecycle group. Adults in couple (48%) and one parent families (49%) with dependent children (under 15 years) were more likely to have undertaken voluntary work than those in other household types.

#### **VOLUNTEERING BY HOUSEHOLD COMPOSITION, Western Australia - 2006**



Source: ABS data available on request, 2006 General Social Survey.

Overall, the most common organisations for whom voluntary work was done in Western Australia were sport and physical recreation (16%), education, training and youth development (13%), religious (7%) and welfare and community (6%). Couples with dependent children (26%) and one parent families (35%) were the most likely to volunteer for education and training organisations.

Support for the community can also be provided by the financial donations people make to organisations. In 2006, 81% of Western Australian adults had donated money in the previous 12 months. International aid (29%), community and welfare services (27%) and health organisations (25%) were the most commonly reported recipients of donations. People in Western Australia were more likely to have donated money to International aid, environment and animal welfare groups than all Australians.

Participation in civic or political organisations is another measure of community involvement. In 2006, 20% of Western Australian adults had participated in one or more organisations of this kind in the previous 12 months. Participation in civic or political groups was higher for males (24%) than females (17%). Men aged 50-64 years (31%) reported higher civic and political participation, compared to all Western Australians.

#### **PERSONAL STRESSORS**

Personal stressors are events or conditions which adversely impact on an individual's life or the collective lives of families or close friends. A stressor may impact on an individual through their own direct experience, such as inability to get a job or serious illness, or

indirectly through a family member's illness or the divorce or separation of parents. In some instances stressors may have an adverse affect on the capacity of individuals to live satisfying or productive lives, and can affect family functioning.

In 2006, almost two-thirds (63%) of Western Australian adults experienced at least one potentially stressful situation or event in the previous 12 months. This was a slightly higher proportion than recorded nationally (59%), but similar to the state proportion recorded in 2002. There was little difference in the proportion of men and women in Western Australia who had experienced a personal stressor, whereas those aged 45-54 years (70%) were more likely, and those aged 65-74 years (48%) less likely, to have experienced a stressor than people in other age groups.

Serious illness (24%) and death (22%) were the two most commonly reported stressors by Western Australian adults. Mental illness (12%), inability to get a job (11%) and divorce or separation (11%) were the next most likely stressors. Persons aged under 30 years (21%) were more likely to have indicated a stressor due to the inability to get a job than those in other ages groups.

With the exception of gambling problems, the rate at which specific personal stressors were reported was similar for Western Australia and Australia. In the case of gambling, 1.5% (22,600 persons) of Western Australian adults reported this as a personal stressor compared to 3.2% (485,000 persons) at the national level.

## **CRIME AND SAFETY**

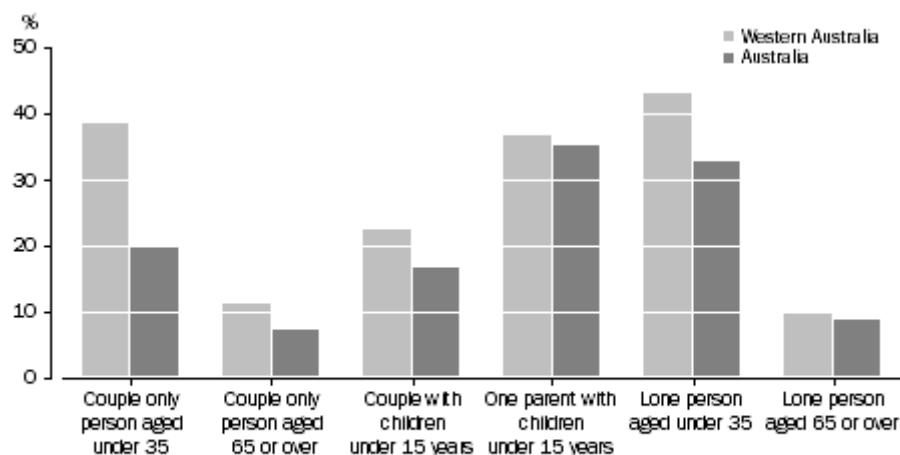
### **VICTIMS OF CRIME**

Being a victim of crime can impact on the physical, emotional and financial wellbeing of individuals and families. Perceptions and fear of crime can also decrease feelings of personal safety and reduce the level of trust in the community. This can lead people to modify their behaviour and may restrict their ability to freely enjoy or participate in the community.

In 2006, 24% of Western Australian adults indicated that they had been a victim of physical or threatened violence or an attempted or actual break-in in the last year. This was higher than the rate recorded nationally (18%). The rate at which people indicated being a victim of physical or threatened violence was slightly higher for Western Australia (13%) than Australia (11%), while the proportion in the state (15%) indicating they had been a victim of an attempted or actual break-in was well above that recorded nationally (9%).

Victimisation rates varied according to living arrangements and age. People aged 18-34 years living alone (43%) or in a couple only family (38%), and single parent families with dependent children (37%), were more likely than those in other living arrangements to have indicated being a victim of either an attempted or actual break-in or of threatened or physical violence in the previous 12 months.

### **VICTIM OF CRIME(a), Selected household type - 2006**



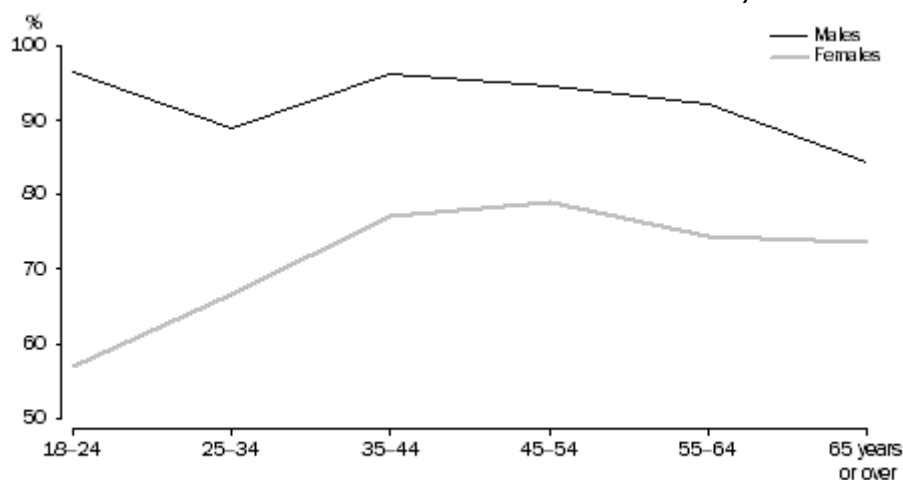
(a) Victim or actual or threatened physical violence or victim of actual or attempted break-in.  
Source: ABS data available on request, 2006 General Social Survey.

The likelihood of Western Australian adults being a victim of threatened or physical violence generally decreased with age. In 2006, 25% of 18-24 year olds indicated they had been a victim compared to 5% of those aged 55 years and over. High victimisation rates were particularly evident among young men, with just over one-third (34%) of 18-24 year olds indicating they had been a victim of physical or threatened violence in the previous year. This was much higher than the equivalent rate recorded in 2002 (16%).

## FEELINGS OF SAFETY

In 2006, most (82%) Western Australian adults indicated that they felt safe or very safe when at home alone after dark. However, 8.5% (127,000 persons) indicated that they felt unsafe or very unsafe when home alone after dark, a slightly higher proportion than the national average (6.7%). Women (14%) were much more likely to feel unsafe or very unsafe after dark than men (3%). Notably, one-quarter of Western Australian women aged 18-24 years, reported that they felt unsafe or very unsafe when home alone after dark.

### FEELS SAFE OR VERY SAFE AT HOME ALONE AFTER DARK, Western Australia - 2006



Source: ABS data available on request, 2006 General Social Survey.

Less than half (46%) the adult population of Western Australia indicated that they felt safe or very safe walking alone in their local street after dark, a similar proportion to the national

average (48%). Men (67%) were more likely to feel safe or very safe than women (24%). Feelings of safety for females generally increased with age, with women aged 18-24 years (57%) most likely to feel unsafe or very unsafe when walking at night alone, and those aged 75 years and over (19%) least likely to do so.

## TRANSPORT

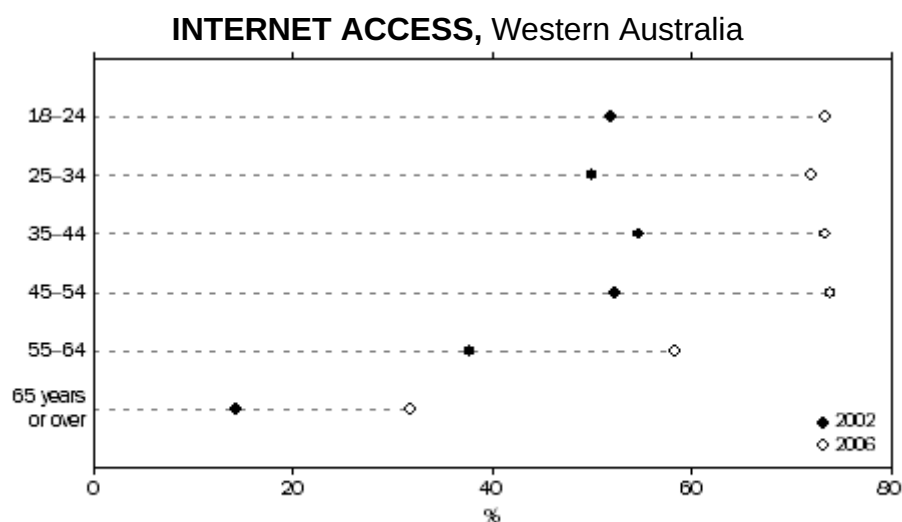
Another potential barrier to interaction within the community can be lack of access to appropriate forms of transport. This can limit choices and opportunities to access goods and services, gain employment, participate in cultural, sporting or community activities, and may restrict contact with family or friends.

In 2006, 88% of adults in Western Australia were able to easily get to places when needed. A similar proportion of men (89%) and women (87%) found it easy to get to places. People aged 75 years or over were least likely to indicate being able to easily get to the places they needed (70%).

Western Australian adults were more likely to have access to a motor vehicle to drive than all Australians of the same age (91% compared to 86%). In Western Australia, a higher proportion of men (93%) than women (89%) had access to a motor vehicle. Again persons aged 75 years and over were least likely to have access to a motor vehicle to drive (68%).

## INFORMATION TECHNOLOGY

Western Australians use of computers and the Internet increased substantially between 2002 and 2006. Over this period, the proportion of adults having used a computer at home in the 12 months prior to interview increased from 59% to 73%. Similarly, the proportion who had accessed the Internet at home grew from 45% to 65%. Increases were evident for males and females and across all age groups. Notably, for those aged 65 years and over, use of a computer at home nearly doubled from 20% to 39%, and accessing the Internet more than doubled from 14% to 32%. Despite these large increases, those aged 65 years and over remained less likely than younger age groups to have used these forms of information technology at home.



Source: ABS data available on request, 2002 and 2006 General Social Surveys.

In 2006, a similar proportion of Western Australian men and women reported having used a computer (75% and 71% respectively) and accessed the Internet at home (66% and 63% respectively).

## **FINANCIAL STRESS**

The financial stress indicators collected in the GSS can provide insights into the economic wellbeing of Western Australian adults. Overall, comparing results for Western Australia from 2002 and 2006 indicates:

- fewer adults reported having one or more cash flow problem in the 12 months prior to interview in 2006 (17%) than in 2002 (22%);
- a fall in the proportion of adults reporting they would be unable to raise \$2,000 in an emergency, from 13% in 2002 to 10% in 2006;
- a higher proportion of people reported that they had no consumer debt in 2006 (54%) than in 2002 (48%); and
- around one in five adults reported taking a dissaving action (such as reducing home loan repayments, selling assets or taking out personal loans) in 2002 and 2006.

In 2006, Western Australian lone parents with dependent children (39%) were more likely to have had a cash flow problem in the previous year, than people in other living arrangements. People aged 18-34 years who lived alone (28%) and lone parents with dependent children (28%) were most likely to be unable to raise emergency money (28%). Those aged under 35 years who lived alone (45%) were also more likely to have taken a dissaving action, than all Western Australians. Couple only households where the person selected for interview was under 35 years (63%) were most likely to have a consumer debt.

## **CULTURE AND LEISURE**

In 2006, 1,361,000 (91%) Western Australian adults had attended cultural venues and events in the 12 months prior to interview. A similar proportion of Western Australian men and women had attended a cultural venue or event, but there were differences between age groups. Nearly all those aged under 30 years (98%) had attended a cultural venue and events compared to 77% of people aged 65 years and over. The most commonly attended venues and events were cinemas (73%), libraries (48%) and botanic gardens (43%).

More than half (56%) of adults in Western Australia had attended a sporting event in the 12 months prior to interview in 2006. However, there were differences in attendance for males and females and across age groups. Males (64%) were more likely to have attended sporting events than females (49%) as were persons aged under 30 years (74%) than those from older age groups.

Participation in sport or physical recreation among Western Australian adults was 70% in 2006, higher than the national rate of 62%. Males and females in Western Australia participated at similar rates (71% and 69%). However, participation remained closely linked

with age, peaking at 78% for those aged under 30 years, and declining to 58% for people aged over 65 years.

## **OTHER READING**

- General Social Survey: Summary Results, Australia (cat. no. 4159.0).
- General Social Survey: Western Australia (cat. no. 4159.5.55.001).
- General Social Survey: User Guide, Australia (cat. no. 4159.0.55.002).
- Voluntary Work, Australia (cat. no. 4441.0).

# **Changing water and energy use in Perth homes (Feature Article)**

## **FEATURE ARTICLE 3: CHANGING WATER AND ENERGY USE IN PERTH HOMES**

### **INTRODUCTION**

Domestic water and energy use has been the focus of much attention in recent times, particularly among the media, public interest groups and government. Concerns have heightened over Perth's available water supply and the use of high energy consuming appliances. With the economy growing rapidly, Western Australia's population and housing requirements have increased substantially, placing considerable pressure on the state's water and energy resources. As a result, the Western Australian Government has implemented strategies, such as rebate schemes and education campaigns, to help reduce the excessive use of water and energy in Perth homes. For government to assess the effectiveness of these strategies, timely and accurate data on domestic water and energy use are urgently required.

A survey of Domestic Use of Water and Energy in Western Australia was recently conducted by the ABS, based on topics proposed by the Water Corporation and Office of Energy. This supplementary survey program is an ABS initiative to develop and run a household survey each year on behalf of State Government. This program provides State Government with the opportunity to survey Western Australian households about emerging topics or issues that are of high priority to the state, particularly when existing data is limited or out-of-date.

This article analyses data from the Survey of Domestic Use of Water and Energy, Western Australia, October 2006 (cat. no. 4652.5) and compares the results with those from past ABS surveys on water and energy use. It examines whether water and energy using behaviours and perceptions have changed over time in Perth homes.

### **WATER USE IN PERTH HOMES**

Western Australia is currently facing significant challenges in meeting its growing water needs, with low rainfall in recent years compromising current water reserves. With 24% of

the state's water consumed by Western Australian households in 2004-05 (ABS, 2006 cat. no. 4610.0) and the demand for water in Perth homes increasing substantially in the last 15 years (following a 34% rise in the number of households from 449,000 in 1992 to 603,300 in 2006), water conservation has become a top priority for the Water Corporation and environmental groups. The Government of Western Australia introduced a rebate scheme for the purchase of water-saving appliances, as well as restrictions on watering gardens from town water supplies. The Water Corporation has also put in place an extensive 'Waterwise' programme to educate households about the importance of saving water in the garden and home.

## **ADDITIONAL WATER SOURCES**

Nearly all (98%) of Perth households are connected to mains or town water supply. However, additional water sources are also available, such as rain and bore water. Approximately 5% of Perth homes used water from a rain water tank in 2006, a proportion unchanged since 2003 (5%). Over half (52%) of the households with rain water tanks used the water for drinking and a slightly higher proportion (55%) used it on the garden. Anecdotally, the installation of rain water tanks, primarily to water the garden, may become more popular in Perth as cheaper DIY installation units become available, and householders take advantage of rebate schemes. Across the capital cities, domestic use of water from rain water tanks ranged from 5% (4.8%) in Brisbane to 38% in Adelaide, with 9% of all homes in Australian capital cities using this source of water (ABS, 2004 cat. no. 4602.0).

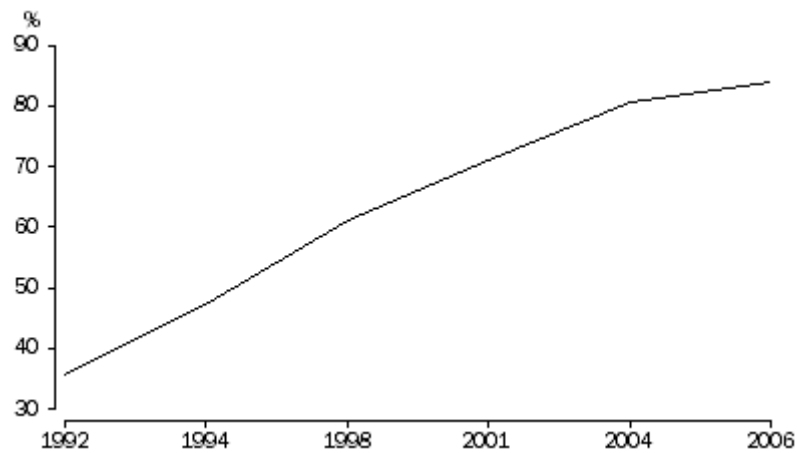
In 2006, bore water was used by one-quarter of Perth households (26%), a proportion that has risen slightly since 2003 (24%) and 1992 (22%). However, the number of households that use bore water has risen from 99,600 in 1992 to 150,900 in 2006. Concerns about bore water use in Perth have been raised recently in relation to its possible impact on ground water levels. Currently bore water users do not have restrictions on the number of days per week they can water their gardens. Only their hours of usage are restricted (from 6pm to 9am each day).

## **WATER EFFICIENCY**

A number of water saving devices have been introduced over the last few decades, which have been taken up in Perth homes with varying degrees of success. Dual flush toilets, an Australian invention, were introduced in the early 1980s. In 1993, it became compulsory in Western Australia for all newly built homes to have dual flush toilets installed (Department of Housing and Works, 2006). Despite 64% of Perth homes being built before 1992, most householders have been keen to convert or replace their single flush toilets. In 2006, 84% of all Perth households had dual flush toilets, compared to only 36% in 1992.

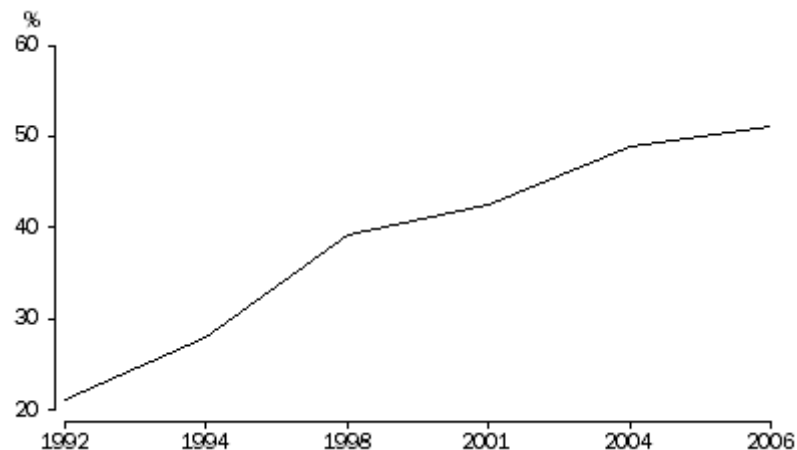
### **PROPORTION OF HOUSEHOLDS WITH DUAL FLUSH TOILETS, Perth**





Even though water efficient shower heads, or low flow shower heads, are not a building requirement, they are included under the 'Waterwise' rebate scheme and their use has been increasing since 1992. In 2006, 51% of all Perth homes had water efficient shower heads installed, compared to 21% in 1992.

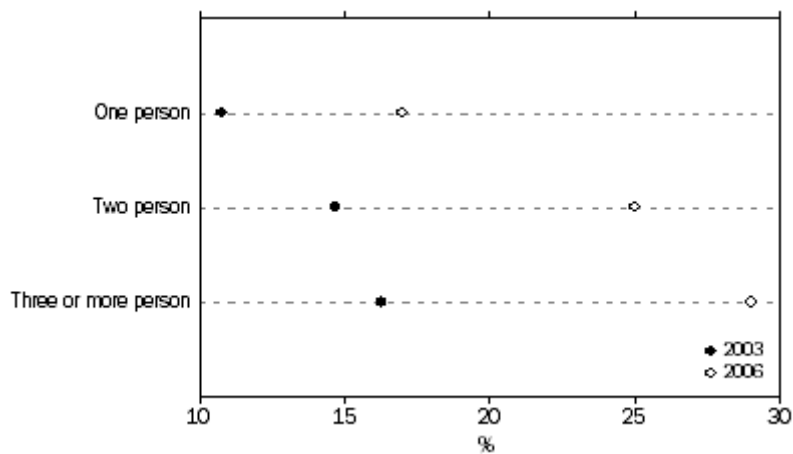
#### **PROPORTION OF HOUSEHOLDS WITH WATER EFFICIENT SHOWER HEADS, Perth**



Washing machines are major consumers of water in Perth homes, especially in larger households. Front loading washing machines greatly reduce water usage and are included under the 'Waterwise' rebate scheme. In 2006, one-quarter of Perth households used a front loading washing machine, a proportion which has almost doubled since 2003 (14%) and more than tripled since 1992 (7%).

In 2006, front loading washing machines were more popular in large households, with almost one-third (29%) of households comprising three or more persons using this type of appliance. The comparable proportion in 2003 was 16%.

#### **PROPORTION OF HOUSEHOLDS WITH FRONT LOADING WASHING MACHINES, By household size, Perth**



In Perth, the proportion of households with dishwashers has more than doubled between 1992 (18%) and 2006 (38%). Some newer dishwashers are very water efficient and can use less water than if dishes are cleaned by hand. However, it is likely that the increased use of dishwashers has led to increased water use in Perth homes, though this increase may have been substantially offset by the greater usage of dual flush toilets and water efficient shower heads (Loh and Coglán 2003). In 2005, Perth recorded the equal lowest dishwasher use among the capital cities, with an estimated 37% of all Perth homes using a dishwasher, compared to 44% of all Australian capital cities (ABS, 2005 cat. no. 4602.0).

## WATER CONSERVATION IN THE GARDEN

Garden water use accounts for around half of annual domestic water consumption in Perth (Water Corporation website). Introducing water conservation practices in the garden can, therefore, dramatically reduce the amount of water being taken from mains or town water supply. Apart from using alternative water sources, such as rain water tanks, applying mulch in the garden and reusing or recycling household water for use in the garden are two popular conservation practices.

In 2006, an estimated 70% of Perth households living in detached dwellings used mulch in their gardens - virtually unchanged since 2003 (69%). Of these households, 37% reused water in the garden, a proportion which has decreased from 2003 (44%). Despite the promotion of grey water use in the garden by the Water Corporation and Local Government, the initial installation costs, coupled with publicised health risks, may have deterred a number of households. Grey water, defined as water from washing machines, showers and the laundry tub, can either be diverted for use in the garden or be processed by a treatment system. The diversion of grey water without treatment can only be applied to the garden via sub-surface irrigation and cannot be stored. Negative publicity about the use of grey water has focussed on disease-causing organisms, which should not be used on vegetable gardens.

Swimming pools and outdoor spas have been recognised as contributing to increased domestic water consumption, with 20% of Perth households having a swimming pool or outdoor spa in 2006. The use of pool and spa covers can dramatically reduce the amount of water wasted through evaporation. Almost one-third (32%) of Perth households with a swimming pool and 90% of those with an outdoor spa used a cover during the warmer months. The majority of households using a pool cover during the warmer months reported using it always (70%), while 14% used it sometimes and 10% never used it.

## ENERGY USE IN PERTH HOMES

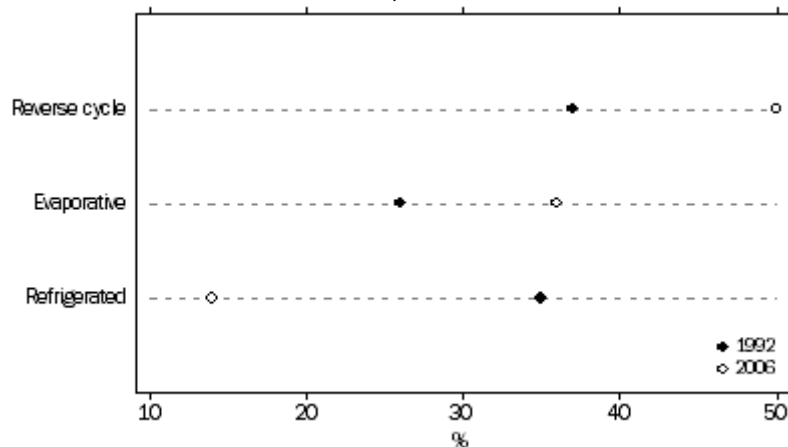
According to recent Australian Bureau of Agricultural and Resource Economics (ABARE) reports, Western Australia's consumption of energy between 1989-90 and 2004-05 rose approximately 4%, the highest across Australia (ABARE 2006). This increase was the result of the state's population and economic growth, including the expansion of mining and other energy intensive industries in the state. This growth has created a housing boom, with the effects still evident in high property prices and building industry pressures. All of these factors have contributed to increased domestic energy use, which is predicted to continue rising over the next couple of decades (Akmal and Riwoe, 2005).

## COOLING

In 1992, 40% of Perth homes used air conditioners. By 2006, this proportion had almost doubled to 74%, with the number of air conditioners more than doubling over the same period (177,800 in 1992 to 447,300 in 2006). The increased use of air conditioners to cool Perth homes has been the driver of various education campaigns (such as Synergy's "Beat the Peak" between 3pm and 6pm), which highlight the high energy use of these appliances.

Apart from the large increase in the number of air conditioners, the type of air conditioning has also changed. In 2006, half of Perth homes with air conditioning reported that their main cooling unit was a reverse cycle air conditioner. The corresponding proportion in 1992 was 37%. The domestic use of evaporative air conditioning has also increased, from 26% in 1992 to 36% in 2006. Usage of both types of air conditioner has increased at the expense of refrigerated air conditioning, which accounted for 35% in 1992, but was down to 14% in 2006.

### PROPORTION OF HOUSEHOLDS USING AIR CONDITIONING, By type of air conditioner used, Perth



The popularity of these air conditioner types appear to have been accompanied by changes to the positioning or location of the unit within the home. In 2006, 33% of Perth homes had an evaporative ducted air conditioner and 24% used reverse cycle split systems. Despite no historical data being available for comparison, anecdotal evidence suggests there has been an increase in the use of split systems and ducted air conditioners, at the expense of older style cooling units set in walls or windows.

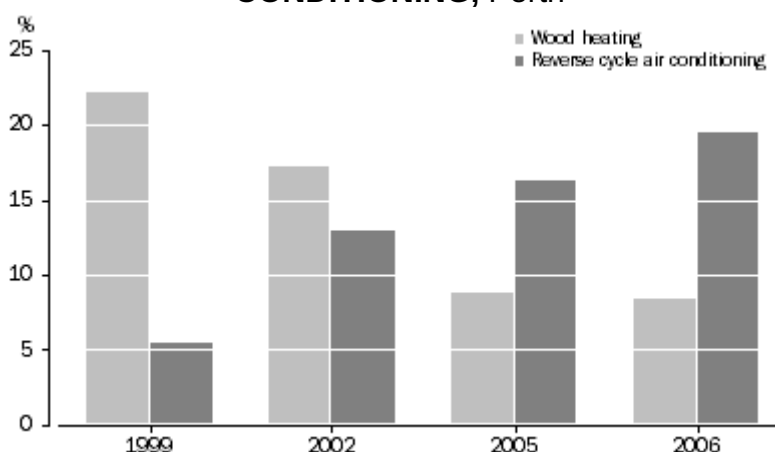
## HEATING

Home heating appliances consume large amounts of energy. In 2006, 89% or 536,500 Perth households reported using heaters, with the majority of these using one heater in their homes (69%). The proportion of Perth homes using heaters has not changed significantly over the last few years, however, the type of heaters used have changed. Gas heaters are the most popular type of domestic heating used in Perth (52% of households in 1999 and 2006) (ABS, 2004, cat. no. 4602.0).

The use of wood heaters has dropped significantly in recent years. Between 1999 and 2006, the use of wood heating in Perth homes more than halved from 22% to 9%, a decline which coincided with State Government initiatives to improve air quality by reducing the amount of wood fire haze (linked to increases in respiratory problems and asthma hospitalisation) (Department of Environment, 2006). The Western Australian Department of Environment conducted the Perth Heating Survey in 2004, to assess the behaviours and perceptions of householders with regard to wood heating. The survey found that, even though householders were aware of wood fires contributing to poor air quality, they rated Perth's air quality as good or very good, highlighting the need for State Government to encourage householders to switch to alternative sources of heating.

Changes in heating type may also reflect the increased popularity of reverse cycle air conditioners. In 1999, one in 20 Perth homes (5%) used reverse cycle air conditioners as their main heater. By 2006, one in five (22%) Perth homes used reverse cycle air conditioning as their main form of heating, second only to gas heating. This certainly supports anecdotal information that the relatively low purchase price of reverse cycle air conditioners, particularly split systems, has resulted in their increased popularity in Perth homes.

### PROPORTION OF HOUSEHOLDS USING WOOD HEATING AND REVERSE CYCLE AIR CONDITIONING, Perth



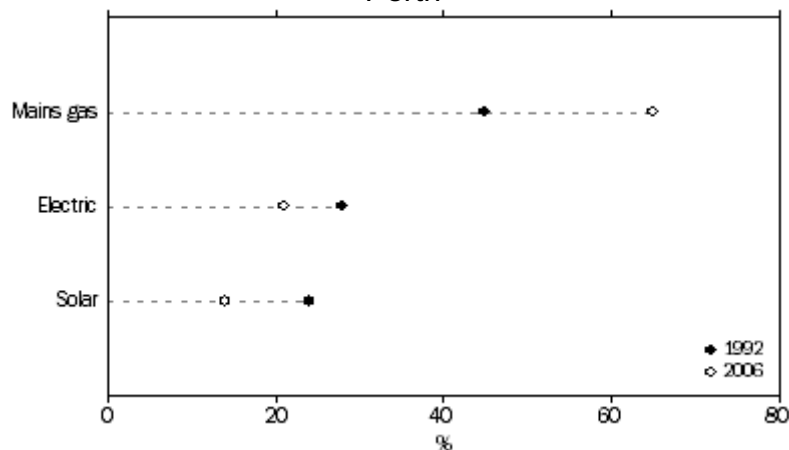
## WATER HEATING

In 2006, 390,700 (65%) Perth homes had mains gas water heating. Of these, half (50%) were storage systems and half (48%) were instantaneous systems. Electricity was the second most popular source for water heating (21%), with more than half using a storage tank system (56%) and 14% using solar hot water systems. Gas water heating appliances have remained the most popular since 1992, when an estimated 45% of Perth households

used this type of appliance. In 1992, however, both electric and solar hot water systems were more popular than they are today (28% and 24% respectively).

Solar hot water heaters have been used in Australian homes for a couple of decades. Besides reducing the cost of heating water by up to 75%, solar hot water systems reduce a home's contribution to greenhouse gas emissions. The Western Australian Sustainable Energy Development Office offers a rebate subsidy to home owners who install solar hot water systems, as the initial cost of these units can be up to five times higher than for other types of water heating appliance. Despite having reduced its use since 1992, Perth still has a much higher proportion of homes using solar hot water than the Australian average (5% in 2006) (ABS, 2005 cat. no. 4602.0).

**PROPORTION OF HOUSEHOLDS WITH WATER HEATING, By type of water heater used, Perth**



## SUMMARY OF FINDINGS

Domestic water and energy use has become an area of particular focus for the Western Australian Government, as the state's water and energy resources have come under increased pressure from a rapidly expanding economy and population. This analysis has shown that, over the last fifteen years, Perth households have embraced a number of new technologies, including appliances that have reduced water use in their homes. However, the increased reliance on high energy using devices, such as air conditioners, has placed added pressure on the energy supply in the state.

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